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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 09/870,144 | 05/30/2001 | Eva Seveck-Muraca | 017575.0680 | 9131 |
| 5073 | 7590 | 06/14/2006 | EXAMINER | |
| BAKER BOTTS L.L.P. 2001 ROSS AVENUE SUITE 600 DALLAS, TX 75201-2980 | | | JUNG, WILLIAM C | |
| | | | ART UNIT | PAPER NUMBER |
| | | | 3768 | |

DATE MAILED: 06/14/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/870,144

Applicant(s)

SEVICK-MURACA ET AL.

Examiner

William Jung

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 January 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-34 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-34 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Response to Arguments

1. Applicant's arguments with respect to claims 1-34 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 1, 2, 11, 17, 18, 23, and 24. are rejected under 35 U.S.C. 102(e) as being anticipated by *Hochman* (US 6,671,540 B1).

Hochman anticipates all claimed features in claims 1, 2, 11, 17, 18, 23, and 24.

Claims 1, 2, 11, 17, 18, 23, and 24: Hochman discloses a method of introducing an exogenous contrast agent with selective fluorescence into a biological tissue to provide scattering of light in multiple spectrum to differentiate plurality of tissue types by exposing the tissue with excitation light with predetermined time-varying intensity such as light intensity wavelength, detecting the light emission from the tissue injected with fluorescent contrast agent emission from the excitation to yield spatial mapping tissue. Hochman also disclose that the image obtained above is based on time-of-flight and the images are enhance by mathematical operation, i.e. modeling (col. 8, line 66 – col. 9, line 19). In addition, Hochman discloses that the method

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involves selecting contrast agent with specific range of wavelength emission and lifetime to vary the contrast of the tissue within the region of interest (col. 14, lines 31-53).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 3-5, 12-14, and 25-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over *Hochman*.

Hochman substantially discloses all claimed features in claims 3-5, 12-14, and 25-27 as disclose above. Hochman's disclosure above includes lifetime of the fluorescent contrast agent to have relatively short lifetime to provide differential contrast enhancement between normal and abnormal tissue. Although, Hochman does not specifically disclose the length of fluorescence lifetime in nanoseconds range, the claimed invention is directed to utilizing fluorescent contrast agent, not the chemical composition. Therefore, the application of fluorescence having a particular lifetime is merely a design choice and do not limit the scope of the claim.

6. Claims 6-10, 15, 16, 19-22, and 28-34 are rejected under 35 U.S.C. 103(a) as being unpatentable over *Hochman* as applied to claims 1, 11, 17, and 23 above, and further in view of *Yohd et al* (US 6,304,771 B1).

Hochman substantially discloses all claimed features in claims 3-5, 12-14, and 25-27 as disclose above. Hochman's disclosure does not explicitly state that the image acquisition steps and image processing includes diffusion approximation, quantum efficiency, modulation

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amplitude changes, and phase shift contrast. However, these limitations are directed to specific obstacles based on time of flight imaging since the different tissue property causing scattering of fluorescence, thus effecting the quantum efficiency, amplitude of the fluorescence and the phase component of the emission. The above steps are evident in Yodh et al where fluorescence optical imaging system deals with correcting diffusion of fluorescent contrast agent, phase shift, amplitude modulation, and quantum efficiency. Therefore, it would have been obvious to one having an ordinary skill in the art at the time the invention was made to apply Yodh et al's teaching to Hochman's method to achieve the claimed invention.

Conclusion


Any inquiry concerning this communication or earlier communications from the examiner should be directed to William Jung, Ph.D. whose telephone number is 571-272-4739. The examiner can normally be reached on Mon-Fri 8:30 AM to 5 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Eleni Mantis-Mercader can be reached on 571-272-4740. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

WJ
June 9, 2006


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SUPERVISORY PATENT EXAMINER
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